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MILLEN WHITE ZELAND & BRANIGAN
ARLINGTON COURTHOUSE PLAZA I
2200 CLARENDON BLVD SUITE 1400
ARLINGTON VA 22201

EXAMINER

PARKER, K

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 11/30/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/627,386

Applicant(s)

Baur et al

Examiner

Kenneth Parker

Group Art Unit

2871



☒ Responsive to communication(s) filed on Apr 25, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 20-96 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 20-96 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☒ received in Application No. (Series Code/Serial Number) 08/466,068.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 9, 10, 11 *Appl. codes*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 20-35, 46-47, 48, 49-58, 60-62, 68-77, 90, rejected under 35 U.S.C. 103(a) as being unpatentable over Togashi et al U.S. Patent # and further in view of Masubuchi, J.P. Laid Open Application # 54-42163 and Bahadur (Mol. Cryst. Liq. Cryst., 1984).

Togashi discloses a liquid crystal device which is responsive to a parallel field (fig. 6), and states that the device may be twisted nematic (col. 11, lines 46-55). The electrode structure is an intermeshed set of comb shapes), the thickness is disclosed as 10um (col. 7, lines 55-65).

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Masubuchi completes the disclosure by disclosing a parallel field device which is a twisted nematic, showing many of the inherent features of TN devices not explicitly disclosed by Togashi (polarizers, the polarizer angles, the gray scale resulting from voltage, etc.).

Lacking from the disclosure are many of the inherent features to a twisted nematic version of Togashi (pixels, control of brightness, polarizer, analyzer, polarizer and analyzer at 90 degrees, twist in plane perpendicular to the substrate), the $n \cdot \Delta d$ of claim 48, and the specific tilt angles of the various claims, the use of dichroic dye and birefringent compensator plates. Masubuchi shows that the TN condition of Togashi is enabled, disclosing a parallel field TN, and showing that it must be rubbed or oblique deposited. Togashi shows an upper layer which is used as a gate insulator.

The driving details were inherent to the active matrix driving such as disclosed by Togashi, including driving with a voltage of less than 80 volts, as the TN devices at the time did not require such a high voltage.

Togashi does not give any further details on creating an alignment condition. The conventional method at the time, and low cost method was rubbing. Therefore it would have been obvious to use the conventional rubbing method for its low cost. Rubbing inherently creates an alignment of 2-5 degrees, and this is evidenced by Bahadur which discusses rubbing as an alignment method on pages 26-27. As 2-5 degrees overlaps the claimed ranges that, and it has been judicially determined that overlapping ranges would have at least been obvious, the claimed ranges would have been obvious.

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The pixel size was most desirable to be as small as possible to enable the most detailed images, but shrinking the size was costly. The pixel size was therefore a result-effective variable, and as the optimization of a result effective variable was judicially determined to have been within the skill level of the ordinary practitioner, selection of these variable ranges would have been obvious.

Togashi discloses the pixel sizes as 50um, which then requires the spacing to be less than 50 um. Having a spacing of less than 2um would have required line widths of 2um or less, which was possible but very difficult and expensive at the time of Togashi. Therefore, it would have been obvious to have a spacing of greater than 2um to enable low cost fabrication, thereby implying a spacing of between 2 and 50 um.

The use of dichroic dyes, the $d \cdot \Delta n < 4 \lambda$, and birefringent plates were all well known enhancements for TN devices. Bahadur evidences the well known status of dichroic dye usage for higher contrast, viewing angle and coloring (pages 33-34 and 55), that the TN cells were known to be thinner (optically) than $4 \cdot \lambda$ for optimal contrast (page 32), and the well known use of compensators for improving the optical characteristics of TN type devices (page 53). Therefore it would have been obvious, in the device of Togashi, to employ dichroic dye, a birefringent compensator, and a $d \cdot \Delta n < 4 \lambda$, as were well known for the reasons stated above.

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2. Claims 20-35, 46-47, 49-52, 53, 54, 56 57, 59, 60, 62 , 68-72 , 73, 74-75, 82, 83, , 90, rejected under 35 U.S.C. 103(a) as being unpatentable over Togashi et al U.S. Patent # and further in view of Masubuchi, J.P. Laid Open Application # 54-42163 and Bahadur (Mol. Cryst. Liq. Cryst., 1984).

Masubuchi discloses a parallel field device which is a twisted nematic. Masubuchi shows the use of rubbing. Lacking from the disclosure are many of the inherent features to a twisted nematic version of Masubuchi (current/voltage source, pixels, control of brightness,, twist in plane perpendicular to the substrate), the $n \cdot \Delta d$ of claim 48, and the specific tilt angles of the various claims, and the birefringent compensator and dichroic dye.

The driving details were inherent to direct addressing method such as disclosed by Masubuchi and well known for its low cost, including driving with a voltage of less than 80 volts, as the TN devices at the time did not require such a high voltage.

Rubbing an inherently creates an alignment of 2-5 degrees, and this is evidenced by Bahadur which discusses rubbing as an alignment method on pages 26-27. As 2-5 degrees overlaps the claimed ranges that, and it has been judicially determined that overlapping ranges would have at least been obvious, the claimed ranges would have been obvious.

The pixel size was most desirable to be as small as possible to enable the most detailed images, but shrinking the size was costly. The pixel size was therefore a result-effective variable, and as the optimization of a result effective variable was judicially determined to have been within

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the skill level of the ordinary practitioner, selection of these variable ranges would have been obvious.

The use of dichroic dyes, the $d \cdot \Delta n < 4 \lambda$, and birefringent plates were all well known enhancements for TN devices. Bahadur evidences the well known status of dichroic dye usage for higher contrast, viewing angle and coloring (pages 33-34 and 55), that the TN cells were known to be thinner (optically) than $4 \cdot \lambda$ for optimal contrast (page 32), and the well known use of compensators for improving the optical characteristics of TN type devices (page 53). Therefore it would have been obvious, in the device of Togashi, to employ dichroic dye, a birefringent compensator, and a $d \cdot \Delta n < 4 \lambda$, as were well known for the reasons stated above.

Double Patenting

3. Claims 28-32 are objected to under 37 CFR 1.75 as being a substantial duplicate of the preceding claims. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 36-45, 63-67, 80, 84-87, 91-96 are rejected under the judicially created doctrine of double patenting over claim of U. S. Patent No. 5576867 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

An electro-optic device with liquid crystal which responds to a field substantially parallel to the surface.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202. The fax phone number for this Group is (703) 308-7726.

Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

November 24, 1998



KENNETH ALLEN PARKER
PATENT EXAMINER
GAU 2871